# **New Materialism and the History of Agribusiness**

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In the mid-1990s, Monsanto CEO Robert Shapiro insisted that the firm he headed, primarily known since its founding in the early 20th century as a commodity chemical manufacturer, had become a forerunner of a new and “more ethereal strategy—sustainability” (Bennett 1998, 43). Biotechnology was core to this strategic transformation, explained Shapiro, for only via “the substitution of information for stuff,” that is, by shifting from agrochemicals to information technology, could multinational corporations like Monsanto confront the environmental degradation caused by unsustainable industrial agriculture (Shapiro 1999, 29).

Three decades later, Monsanto was acquired by the German chemical firm Bayer, largely for its expertise in biotechnology and digital agriculture. Yet for all the continued promises to substitute “information for stuff,” Monsanto remains one of the world’s largest producers of agrochemicals. Glyphosate, developed by Monsanto and marketed as Roundup since the early 1970s, continues to be the most widely used herbicide in modern agriculture. Despite long being touted as environmentally friendly due to its compatibility with conservation tillage and its relatively short persistence in soil after application, in recent years the material realities of glyphosate’s environmental impacts have become increasingly visible. The emergence of glyphosate-resistant “superweeds,” the successful waging of lawsuits targeting Roundup as a harm to human health, and environmentalist critiques of genetically modified Roundup Ready seeds highlight the political and ethical issues that have only become more urgent in the time since Shapiro’s departure from Monsanto in 2001 (Elmore 2019).

 The relationship between the history of corporate agribusinesses and the contemporary challenges of developing more sustainable approaches to agriculture is a particularly inviting arena in which to explore the possibilities offered by new materialist thinking. Proponents of new materialism, I suggest, would especially highlight the ontological, methodological, and ethical affordances offered by the approach.

 Ontologically, new materialists are united in their insistence on monism. The rejection of dualism—particularly the notion that “nature” and “culture” are somehow separate—is fundamental to the new materialist worldview (Connolly 2013; Dolphijn and van der Tuin 2012). The consequences of such an ontological shift are profound. New materialists such as Jane Bennett would have us accede to things—foods, commodities, agrochemicals, genetically modified seeds—“their due” as active rather than passive constructors of the (one) world that we all inhabit (Bennett 2010, viii). Doing so fundamentally undermines the dualist project of creating a hierarchical world in which the needs and interests of rational humans dominate over all other beings. A new materialist reading of Robert Shapiro’s definition of agricultural sustainability as a triumph of “information” over “stuff,” therefore, would suggest that such thinking is nonsensical at best and deeply misleading at worst. Stock market investors might liketo imagine a world in which multinational agribusinesses sustainably feed the world simply by manipulating genetic sequences, but for a new materialist the rise of “superweeds”—impervious to the latest agricultural technology, and with devasting consequences for global farm yields and livelihoods—is just one stark example of the power of material things to elude the control of even the most hubristic of human enterprises.

 Methodologically, new materialists are remarkably diverse in their approaches, but across the field there is a commitment to exploring systems and things as dynamic processes, always in a state of *becoming* (Connolly 2013; Coole 2013). This is not a new idea for agricultural historians, for whom the methodological assumption that all things are the product of change over time is hardly controversial. Yet in the hands of new materialists, the turn to processes of becoming can be exceedingly useful for investigating surprises and paradoxes, and thus overturning simplistic assumptions. For proponents of new materialism such as Jane Bennett and David Goodman, the study of agrofood systems looks very different from the perspective of a human body composed largely of bacteria rather than a passive conduit for the sugars and fats of an industrial food regime (Bennett 2010, 39-51; Goodman 2001). Reflective new materialists, much like most historians I know, do not seek universal truths but instead are always creatively searching for new ways of understanding the complex world we inhabit; in this, agricultural historians and new materialists share a pragmatic approach to methodology that seeks to interpret and understand as much as (if not more than) to explain and predict (Connolly 2013, 409). In the case of understanding the history of a multinational agribusiness such as Monsanto, the pragmatic methodological sensibility of new materialism is perhaps most useful for rejecting teleological assumptions, as if the past predicts the future in some linear fashion. If all things, including multinational corporations and the political institutions that sustain them, are in the process of becoming, then even the most entrenched and seemingly all-powerful organizations are far from “unassailable” (Coole 2013, 453).

 The ethical upshot of new materialism both follows from and precedes its ontological and methodological aspects. If nature and (human) culture are inseparably entangled, and understanding this entanglement involves rejecting linear logics, then, according to new materialists, a giant rip is torn in the dualist ethical shroud that prevents humans from acting more responsibly, gently, and carefully in the material world. This is perhaps most evident in Anna Tsing’s investigation of exotic mushrooms that resist the machinery of industrial capitalism, the matsutakes that she holds up as exemplars of “what manages to live despite capitalism,” organisms that model a capitalism “[that] has no teleology” (Tsing 2015, viii, 23). New materialists would reject the anthropocentric claims to “sustainability” made by an agribusiness CEO who insisted that only through the monopolistic might of a multinational corporation can a hungry (human) world be fed. From the ethical position of new materialism, the question is not how to scale up industrial food production to meet the challenges of global environmental degradation, but instead how to re-scale and re-think capitalism, ultimately moving to a new process of becoming, built not on hubris but on responsibility in and to the material world (Connolly 2013; Coole and Frost 2010). Not all agricultural historians will share this new materialist political vision, but the urgency of their ethical stance is difficult to ignore when the subjects of our studies—organisms and organizations, lives and livelihoods, processes and power—are so thoroughly intertwined.

 Yet for all the attractive elements provided by new materialist thinking for confronting the history of agribusiness, there are a number of valid concerns that suggest a need for some critical distance. For one, monist ontologies have for many years been derided by philosophers as “idiosyncratic” at best and “ridiculous” at worst (Rekret 2016, 226; Schaffer 2018). It is far beyond my capability to either defend or attack the logical consistency of a monist ontology, but I can see great value in the earlier concept of “second nature” developed by Alfred Schmidt (1971), Neil Smith (2008), and William Cronon (1991). Although Bennett (2010, 115) criticizes the concept of “second nature” for reifying a distinction between human culture and the material world, for the many environmental and agricultural historians who have deployed the concept, precisely the opposite has been the intent. Indeed, when Alfred Schmidt developed the concept by applying Frankfurt School thinking to Karl Marx’s writings on nature, the explicit goal was to replace a dualist ontology with a dialectic approach, to explore dynamic and not static processes of power in a material world. New materialists bring fresh language of “assemblages” and “entanglement” and “vitality” to the fore, but even some of the field’s strongest proponents are not entirely clear on whether the ideas are fundamentally “new,” or whether they more humbly seek to build on longstanding concepts and approaches to elicit “a fresh ‘rhythm’ in academia today” (Dolphijn and van der Tuin 2012, 89).

 Some new materialists have likewise reflected on the field’s prioritization of ontology and ethics over epistemology (Dolphijn and van der Tuin 2012, 16; Rekret 2018). Many agricultural historians would be taken aback by the suggestion that *all* knowledge is situated and subjective; even new materialists such as Jane Bennett appear to bracket concerns about the nature of knowledge as distractions from the strategic advantages of pursuing a “vital materialist ontology” (Rekret 2018, 227). From the perspective of cultural theorist Paul Rekret, new materialists’ failure to engage with epistemological questions leads to studies that “obscure, and at times even risk naturalising the logics by which non-human nature enters into social relations” (Rekret 2018, 237). Indeed, we might see in the turn to “new” materialism a loss of the “old” attention from social scientists to human-conceived structures of power that are objectively real, even when non-material, as with corporate agribusiness’s efforts to strategically manipulate stakeholders by distorting or even disowning their own historical actions (Hamilton and D’Ippolito, 2020). Microorganisms such as bacteria are clearly powerful actants in history, but so are immaterial human concepts and actions such as the financial speculations and institutional arrangements that are increasingly defining the “nature” of contemporary agricultural production and consumption (Clapp and Isakson 2018; Hamilton 2020).

 Neither Monsanto nor its new corporate parent Bayer has so far been entirely successful in replacing agrochemical “stuff” with digital “information.” Nor have multinational agribusinesses succeeded in bending the matsutake mushroom to the logics of industrial agriculture, or in stemming the tide of glyphosate-resistant superweeds. Yet for all the agency of the non-human material world, inhabited by “actants” ranging from microorganisms to inert matter, it is nonetheless striking just how many organisms have been subjected to forces that, at least to this historian, seem firmly in the control of human agents. Cows in industrial-scale milking parlors, soybeans genetically programmed to require Monsanto’s chemical inputs, and peas transformed into burgers that taste astoundingly like beef raise many troubling ontological, ethical, and epistemological questions about the nature and sustainability of modern agribusiness. I am confident that agricultural historians will continue to play an important role in addressing these questions. For at least some of us, the ideas developed by new materialism, when considered with careful critical distance, can and should play a role in generating our research questions and methods.

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